

SOME BIRD ASSOCIATIONS OF INDIAN BUILT-UP AREAS

BY

M. D. LISTER

The foundation of the vast majority of village communities is the winning of a livelihood from the land itself, or its immediate products. The village is the communal settlement of the folk who cultivate the land for some distance round, and as competition for living space in the country is not great, it usually has an open formation with plenty of ground between buildings. The village is in fact an addition superimposed upon the face of the surrounding country and grafted into it, and it is often of such loose and open texture that it does not destroy, even within its boundaries, the character of the habitat on which it is imposed. Its own communal character is not sufficiently strong or extensive to oust the character of the natural countryside, and the most it does is to modify it. The extent of this modification depends on the nature and size of the community.

A hamlet of half a dozen houses will merge into the countryside in which it is set and the only modification of the original habitat, as far as the avifauna is concerned, may be the attraction of a few sparrows or an occasional pariah kite. It is only when we come to the larger village or the small country town that any appreciable modification is apparent. Here the gathering of a large number of human beings and their works may well tend to squeeze out the wilder birds from the land covered by the built-up area, while at the same time attracting other species in its wake. Not only do the buildings themselves offer suitable nesting sites to some of the robins and mynas, and also house swifts, but the village tanks attract kingfishers and pond herons, while the garbage and dirt draw the pariah kite and the house crow, and the carcasses of dead oxen provide food for the vultures. The more highly-developed the community, the more man-made attractions there are for birds which would otherwise be absent or present only in much smaller numbers; and of course a larger number of species is driven out. In the big towns these attractions may be large and may take such specialised forms as sewage farms and formal parks, docks and harbours with their varied flotsam and jetsam, factories with their waste, abattoirs, and large public buildings.

The larger and the faster a town grows the greater is its impact upon the avifauna of the land swallowed up by it, and the more effectively is the character of the surrounding country submerged, so that eventually many of the birds which used to inhabit the place when the settlement was only small are driven out—though they are rarely expelled entirely—and a less varied avifauna, better adapted for survival in the modified conditions, takes its place. Even when the climax avifauna of a large town has been reached it does not necessarily remain static. A town, after all, is a living organism. The town council may in its wisdom decide to make public gardens

when the rows of houses occupying a certain site fall or are pulled down; or an acre or two of undeveloped waste land may be allocated for the erection of a factory. Basically, no doubt, the climax urban avifauna undergoes little alteration, though within its limits local changes do take place. In London the Black Redstart (*Phoenicurus ochrurus*) was almost unheard of twenty years ago, yet today its numbers are increasing and a small number has even successfully bred there, so that it looks as though this species is taking its place as one of the regular London birds. The increase of this species has no doubt been helped by the large number of derelict buildings made available through the ravages of the recent war. And it is surprising what a variety of birds can be met with casually in even the largest and most congested of towns.

It would be an interesting study to carry out a properly organised survey of the changes taking place in the bird population of a given area owing to the growth, and perhaps the industrialisation, of a rapidly expanding town, but such opportunities rarely present themselves in an accessible form.

It is not possible in relation to ecology to apply any legal definition of a built-up area. It is a question of degree to be considered in each separate case whether the impact of the settlement on the countryside to which it has been added is sufficiently great to have created a distinct ecological habitat of its own. A tentative classification of Indian built-up areas might be as follows:—

1. Large industrial towns or ports: *types*, Bombay, Calcutta.
2. Large non-industrial, European-type towns in the plains: *type*, New Delhi.
3. Large non-industrial, Indian-type towns in the plains: *type*, Old Delhi.
4. Smaller industrial towns: *type*, Jamshedpur.
5. Small non-industrial, European-type towns in the plains: *type*, Ambala Cantonment.
6. Small non-industrial, Indian-type towns in the plains: *type*, Jessore, Bengal.
7. Small towns in the hills: *types*, Simla, Darjeeling.
8. Large villages in the hills: *types*, Solan, Kurseong.
9. Large Indian villages in the plains.

Small villages might or might not be worth including as a separate habitat, depending on their character, size and looseness of construction. Smaller units still usually have no easily defined avifauna of their own. Incidental to this classification there are the larger man-made features, such as sewage farms, public parks and gardens, which may each attract its own particular set of birds.

The following account of the bird associations of some built-up areas does not pretend to be either exhaustive or even representative. It is compiled from notes made at various times and places during the recent war, when opportunities for controlled surveys of this kind were extremely rare. It may, however, act as a pointer for more thorough and better organised work on the subject in the future.

The forest regions referred to are those adopted by H. G. Champion (1936).

DESCRIPTION OF AREAS SURVEYED

1. **S o l a n**, Simla Hills. Punjab. Western Himalayan foothills. Montane Temperate Forest Region. Altitude: 4,500-5,500 ft. A.S.L. Periods of survey: 6 June to 5 July and 2-10 August, 1942.

A small cantonment adjoining a small Indian hill town, with the usual congested bazar. The cantonment buildings were mostly wooden bungalows, where some 5-600 troops were then being housed, scattered over part of one of the smaller hills, fairly well-clothed with deciduous trees and bushes. The Indian town was of the usual type, with small open-fronted shops attracting myriads of flies, with the usual collection of refuse about the streets. *Weather*: temperature from 85° to 100°F.; varying cloud; a few heavy rain and thunder storms.

2. **J e s s o r e**, Bengal. Indo-Gangetic Plain. Inland portion of Delta area. Moist Tropical Forest Region. Altitude 20 ft. R.S.L. Period of survey: 14 April 1943 to 9 September 1944, with several breaks of a fortnight and one of a month.

A small typical Indian town, with a small congested core (the bazar) near its north end, spreading out more and more thinly away from the bazar. The bazar consists of little more than 2-3 narrow streets lined with rather dilapidated buildings, with here and there a few trees. The only apparent drainage consisted of a narrow stone gully down the sides of some of the roads, which were often littered with garbage. There were large numbers of eating houses, with the usual open fronts where the food was exposed to the air and attracted clouds of flies.

Outside the bazar area the roads were fairly open and lined with large mature trees. The buildings were well spaced out and the rest of the ground was occupied by large compounds and some patches of waste land. The whole area was very green and well-wooded with mature trees of many species and luxuriant vegetation. The native population had been swelled by the influx of several thousand servicemen. Traffic consisted of a fair number of service vehicles, but otherwise the only forms of transport were the cycle-rickshaws (which were legion) and a large number of Indian carts drawn by bullocks and water buffalo. There were also a few old-fashioned stage coaches and 'family' carts drawn by horses.

The whole area was liberally sprinkled with tanks which were normally full of water. Most of the larger houses and public buildings had plenty of open work about them in the form of verandahs, covered balconies, large carriage porches and so on, which attracted such birds as house swift, house sparrow and common myna for nesting purposes. Many of the Indian buildings were merely of the *busti* type, though a fair number of them were of brick or stone. The cracking plaster of many of these buildings must afford good cover for innumerable insects, as well as rats, mice, snakes and lizards.

Predominant among the trees were banyan (*Ficus bengalensis*), mango (*Mangifera indica*) and coconut palms (*Cocos nucifera*), with a few tamarinds (*Tamarindus indica*). *Fauna*: Bullocks, water-

buffaloes and goats predominated, with a few horses and many pie-dogs. Jackals (*Canis aureus*), striped squirrel (*Sciurus palmarum*), common grey mongoose (*Herpestes mungo*) all numerous. Flying foxes (*Pteropus edwardsii*) were very numerous from July to November. Other bats (not identified) were plentiful. Frogs very numerous during the rainy season. Snakes (various) fairly plentiful. Insects: legion.

3. B a l l y, Calcutta. Lower Bengal. Inland portion of Delta area. Moist Tropical Forest Region. Altitude approx. 20 ft. A.S.L. Period of survey: 11 December 1944 to 16 April 1945.

A fairly large Indian village among which was mixed a service camp. The whole neighbourhood, which is really an outer suburb of Calcutta, was sprinkled with jute mills and small factories. The built-up area covered the best part of half a square mile. Many of the buildings, both Indian and service, were of the *busti* kind (mud or bamboo wattle, with thatch, corrugated iron or felt roofs, and mud or concrete floors) and the rest were mostly of more permanent construction; all the service buildings were fairly large. Probably 90% of the surface of this area was taken up with compounds, and it was all well-wooded with various kinds of trees among which neem (*Melia azadirachta*), banyan, coconut palm and palmyra palm (*Borassus flabelliformis*) predominated. There was no real core to the area, which was liberally sprinkled with tanks; the buildings were spaced out fairly evenly in density over the whole of the built-up area. The roads were poor, the majority unmetalled and rather dusty. In one corner of the area, adjoining the Hooghly, was a large Hindu temple set in extensive well-wooded grounds, to which crowds of people thronged at every Hindu festival. Almost adjoining it was a small factory which periodically emitted a good deal of black smoke and noxious fumes. I lived in this area and had fairly frequent, though usually short opportunities for bird-watching.

Fauna: oxen, water buffaloes, dogs, cats and poultry were plentiful. Mongoose and striped squirrel, both fairly plentiful. A few flying foxes seen, and other bats (not identified) fairly numerous. On the whole, the variety of birds seen here was small and disappointing. *Weather*: cold season, up to almost the beginning of the South-west monsoon.

4. A m b a l a, Punjab. Upland area of Indo-Gangetic Plain. Dry Tropical Forest Region. Altitude about 900 ft. A.S.L. Period of survey: 6 July to 1 August, 1942.

The cantonment comprises the military camp and a fairly large residential area. The camp itself is fairly open, most of the buildings being large and arranged in series some distance apart with open grass land between them. The trees bordering the roads, which were all macadam, included neem and sisham (*Dalbergia sissoo*), with a few peepal (*Ficus religiosa*), eucalyptus (*Eucalyptus* sp.), and babool (*Acacia arabica*).

The residential part consists of well-planned roads, with many large bungalows set well apart, each in its own compound, which usually seemed to be allowed to run fairly wild without becoming overgrown. Most of the trees there were large and mature; nearly all were in leaf and some in flower. A considerable variety of species was represented, whose names I did not know. *Fauna*: many oxen, water

buffalo, goats, horses and striped squirrel. A fair number of snakes reported, though I saw none myself. *Weather*: temperature 80° to 100°F. A good deal of heavy rain which caused severe temporary flooding. I had a good deal of opportunity for bird watching.

5. New Delhi, Punjab. Indo-Gangetic Plain. Dry Tropical Forest Region. Altitude approximately 718 ft. A.S.L. Period of survey: 15 August to 30 December, 1942.

New Delhi is no doubt so well-known as to make a full description of it as an ecological type unnecessary, but I give below a short note on it for the sake of completeness.

New Delhi is built to a great extent on the open garden city design, with well laid-out metalled roads, with large 'roundabouts' at the junctions planted with trees and flowering shrubs. The bungalows and houses are large, with big compounds (very few of which are formally laid out). The whole area is well-wooded with mature trees of many kinds and shade trees are planted along all the roads. The traffic at the time of this short survey was not heavy and consisted chiefly of horse-drawn tongas and bullock-carts (with a consequent abundance of manure), and a good proportion of motor vehicles.

The open spaces are really almost large enough to merit being treated as a separate habitat, but for the sake of completeness I have included them in this record. Kingsway, leading up to the vast buildings of the Secretariat, runs through a large area of open grassland, with two parallel rows of mature trees and a series of large artificial rectangular ponds or tanks on either side; most of these tanks were empty or almost so during the survey period. The Lady Willingdon Park, covering probably nearly 100 acres, is a fairly typical urban park, with sandy-gravel paths, grass kept in check by hand scything, and a good sprinkling of trees, mostly in straggling clumps and of the light-leaved kind; babool are plentiful. A few fairly large clumps of bushes with some long, rough grass of the pampas type. The Lodi tombs are here, consisting of 4-5 large, mosque-like buildings of more or less open construction, with plenty of holes and cracks.

Fauna: Striped squirrel and mongoose plentiful, and a few jackals. *Weather*: end of monsoon and first half of the cold season. I had plenty of opportunities of bird watching.

6. Karachi, Sind, Indo-Gangetic Plain (Punjab, Sind and Rajputana portion). Salt Steppes and Semi-Desert Region. Altitude: sea level, or negligible. Period of survey: 14 September to 2 October, 1943.

The cantonment is of the usual type with a lay-out rather similar to an English garden city. Large houses, bungalows, hotels, clubs, etc., all in fairly large compounds. Roads usually metalled, broad, and bordered with shade trees. A fair amount of traffic, comprising both motor vehicles and slow-moving camel-carts, etc. Fairly well-wooded with various kinds of trees, of which I particularly noticed tamarind and babool. The whole area was fairly dusty with sand and so on blown in from the surrounding desert.

The list of birds for here is merely a list of those I happened to see, as I did not have very many opportunities for bird-watching. It is certainly nothing like a complete list of all species to be found in Karachi.

INCIDENCE OF SPECIES

The following symbols have been used:—

* = identified beyond doubt.

† = probable, but not certain identification.

§ = species definitely identified, but sub-species uncertain.

The scientific names are chiefly those given in the Fauna of British India—Birds (2nd Edition).

Species	Solan	Jessore	Bally	Ambala	Delhi	Karachi
Jungle Crow (<i>Corvus macrorhynchos</i>)	...	*	*	*	*	
House Crow (<i>Corvus splendens</i>)	...	*	*	*	*	*
Tree Pie (<i>Dendrocitta vagabunda</i>)	...		*	*	*	
Grey Tit (<i>Parus major</i>)	...	*	*	*		
Jungle Babbler (<i>Turdoides somervillei (terricolor)</i>)	...		*	*	*	*
Common Babbler (<i>Argya caudata</i>)	...				*	
Large Grey Babbler (<i>Argya malcolmi</i>)	...			*	*	
Abbott's Babbler (<i>Malacocincla sepiaria abbotti</i>)	...		†			
Common Iora (<i>Aegilhina tiphia</i>)	...		*			
Redvented Bulbul (<i>Molpastes cafer</i>)	...	*	*	*	*	
White-cheeked Bulbul (<i>Molpastes leucogenys</i>)	...	*			*	
Red-whiskered Bulbul (<i>Olocorpsa jocosus</i>)	...		*			
Northern Indian Stonechat (<i>Saxicola caprata</i>)	...					*
Brown Rock Chat (<i>Corcomela fusca</i>)	...				*	
Brown-backed Indian Robin (<i>Saxicoloides fulicata</i>)	...	*		*	*	
Magpie Robin (<i>Copsychus saularis</i>)	...	*	*	*	*	
Redbreasted Flycatcher (<i>Muscicapa parva</i>)	...		*	*		
Verditer Flycatcher (<i>Eumyias thalassina</i>)	...			*		
Paradise Flycatcher (<i>Chalcophaps indica</i>)	...	*				
Whitebrowed Fantail Flycatcher (<i>Rhipidura aureola</i>)	...		*			
Brown Shrike (<i>Lanius cristatus</i>)	...			*		
Ashy Swallow-Shrike (<i>Artamus fuscus</i>)	...		*			

Species	Solan	Jessore	Bally	Ambala	Delhi	Karachi
Black Drongo (<i>Dicrurus macrocerus</i>)	...	*	*	*	*	*
Tailor Bird (<i>Orithotomus sutorius</i>)	...		*	*	*	
Crowned Willow (Yellow-browed) Warbler (<i>Phylloscopus humii</i>)	...		†		†	
Indian Oriole (<i>Oriolus o. kundoo</i>)	...	*	*	*		
Black headed Oriole (<i>Oriolus xanthornus</i>)	...		*	*		
Rosy Pastor (<i>Pastor roseus</i>)	...					*
Greyheaded Myna (<i>Sturnia malabarica</i>)	...		*	*		
Blackheaded (Brahminy) Myna (<i>Temenuchus pagodarum</i>)	...	*		*	*	
Common Myna (<i>Acridotheres tristis</i>)	...	*	*	*	*	*
Pied Myna (<i>Sturnopastor contra</i>)	...		*	*		
Indian House Sparrow (<i>Passer domesticus</i>)	...	*	*	*	*	*
Dusky Crag Martin (<i>Riparia concolor</i>)	...				*	
Wiretailed Swallow (<i>Hirundo smithii filifera</i>)	...	*				
Striated Swallow (<i>Hirundo daurica</i>)	...	*				
Indian White Wagtail [<i>Motacilla alba (dukhunensis)</i>]	...				*	
Masked Wagtail [<i>Motacilla alba (personata)</i>]	...				*	
Large Pied Wagtail (<i>Motacilla maderaspatensis</i>)	...				*	
Whitefaced Wagtail (<i>Motacilla leucopsis</i>)	...		†			
Indian Tree Pipit (<i>Anthus hodgsoni</i>)	...		*			
White-eye (<i>Zosterops palpebrosa</i>)	...	*				
Purple Sunbird (<i>Cinnyris asiatica</i>)	...	*	*	*	*	*
Purple-rumped Sunbird (<i>Cinnyris zeylonica</i>)	...		*			
Tickell's Flowerpecker (<i>Dicaeum erythrorhynchum</i>)	...		*			
Little Scalybellied Green Woodpecker (<i>Picus vittatus</i>)	...		*			
Yellowfronted Pied (Mahratta) Woodpecker (<i>Dryobates mahrattensis</i>)	...		*			
Goldenbacked Woodpecker (<i>Brachypternus bengalensis</i>)	...		*	*		
Tickell's Goldenbacked Woodpecker (<i>Chrysocolaptes guttacristatus</i>)	...		*			
Green Barbet (<i>Megalaima zeylonicus</i>)	...		*		*	

Species	Solan	Jessore	Bally	Ambala	Delhi	Karachi
Blue-throated Barbet (<i>Megalaima asiatica</i>)	...	*	*			
Coppersmith (<i>Megalaima haemacephala</i>)	...	*	*		*	
Indian Cuckoo (<i>Cuculus micropterus</i>)	...	*				
Common Hawk Cuckoo (<i>Hierococcyx varius</i>)	...	*	*			
Pied Crested Cuckoo (<i>Clamator jacobinus</i>)	..	*		*	*	
Indian Koel (<i>Eudynamis scolopaceus</i>)	...	*	*	*	*	*
Common Crow-Pheasant (<i>Centropus sinensis</i>)	...	*			*	
Lesser Crow-Pheasant (<i>Centropus bengalensis</i>)	...		†			
Large Indian Parakeet (<i>Psittacula eupatria</i>)	...	†			†	†
Roseringed Parakeet (<i>Psittacula krameri</i>)	...		*	†		
Roller (<i>Coracias bengalensis</i>)	...	*	*	*	*	
Common Green Bee-eater (<i>Merops orientalis</i>)	...	*	*	*	*	*
Pied Kingfisher (<i>Ceryle rudis</i>)	...	*				
Common Indian Kingfisher (<i>Alcedo althis</i>)	...	*				
Brownheaded Storkbilled Kingfisher (<i>Ramphalcyon capensis</i>)	...	*	*			
Whitebreasted Kingfisher (<i>Halcyon smyrnensis</i>)	...	*	*	*	*	
Hoopoe (<i>Upupa epops</i>)	...	§		§	§	
Indian House Swift (<i>Micropus affinis</i>)	...	§	*	*	*	
Palm Swift (<i>Cypsiurus batassiensis</i>)	...		*			
Indian Longtailed (Horsfield's) Nightjar (<i>Caprinulagus macrourus</i>)	...		†			
Barn Owl (<i>Tyto alba</i>)	...				†	
Collared Scops Owl (<i>Otus bakkamoena</i>)	...		†	†		
Indian Scops Owl (<i>Otus sumia</i>)	...				†	
Spotted Owlet (<i>Athene brama</i>)	...		*	*	†	*
Jungle Owlet (<i>Glaucidium radiatum</i>)	...		*			
King Vulture (<i>Sarcogyps calvus</i>)	...	*	*	*	*	
Longbilled Vulture (<i>Gyps indicus</i>)	...		*	*		
Whitebacked Vulture (<i>Pseudogyps bengalensis</i>)	...	*	*	*	*	*

Species	Solan	Jessore	Bally	Arbala	Delhi	Karachi
White Scavenger Vulture (<i>Neophron percnopterus</i>)	...	*		*	*	*
Crested Serpent Eagle (<i>Spilornis cheela</i>)	...	*				
Brahminy Kite (<i>Haliastur indus</i>)	...	*	*			
Pariah Kite [<i>Milvus migrans (govinda)</i>]	...	*	*	*	*	*
Shikra (<i>Astur badius</i>)	...	*				
Blue Rock Pigeon (<i>Columba livia</i>)	...	*			*	*
Rufous Turtle Dove (<i>Streptopelia orientalis</i>)	...	*				
Spotted Dove (<i>Streptopelia chinensis</i>)	..	*	*	*	†	
Little Brown Dove (<i>Streptopelia senegalensis</i>)	...				*	
Indian Ring Dove (<i>Streptopelia decaocto</i>)	...			*	*	
Red Turtle Dove (<i>Oenopopelia tranquebarica</i>)	...		*	*		
Grey Partridge (<i>Fraucolinus pondicerianus</i>)	...	*				
Indian Stone Curlew (<i>Burhinus oedipnemus</i>)	...				†	
Redwattled Lapwing (<i>Lobivanellus indicus</i>)	...				*	
Indian Darter (<i>Anhinga melanogaster</i>)	...				*	
Cattle Egret (<i>Bubulcus ibis</i>)	...	*	*			
Indian Pond Heron (<i>Ardeola grayi</i>)	...	*			*	

REFERENCE

Champion H. G. (1936). 'A Preliminary Survey of the Forest Types of India and Burma.' *Ind. For. Rds.* (New Series) Sylviculture, Vol. I, No. 1 : 1-287.